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NEW RECORDS OF MARTINS' BARE-FACE TAMARIN, *SAGUINUS MARTINSI* (PRIMATES: CALLITRICHIDAE)

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Introduction

Martins' bare-face tamarin, *Saguinus martinsi*, was described by Thomas (1912) as *Leontocebus martinsi*, based on material collected in the locality of Faro, left bank of the Rio Nhamundá, Pará, Brazil. The new species was named in honor of the collector of the holotype, Oscar Martins. Hershkovitz (1966) considered Martins' bare-face tamarin to be a subspecies of *S. bicolor*, reaffirming this taxonomic status in subsequent studies (Hershkovitz, 1970, 1977). Hershkovitz (1977) considered all bare-face tamarins as conspecifics and recognized three subspecies in this group: *S. b. bicolor* (Spix, 1823), *S. b. martinsi* and *S. b. ochraceus* Hershkovitz, 1966. Groves (2001, p.146) found this tamarin to be "extremely distinct" from *S. bicolor* and listed it as a full species and, although not having examined any specimens, provisionally placed *ochraceus* as a subspecies. Martins' bare-face tamarin is one of the least-studied taxa among the Neotropical primates, with just six localities of occurrence recorded and few specimens in museums (Thomas, 1912; Cruz Lima, 1945; Hershkovitz, 1977).

Most studies on the biology of bare-face tamarins refer to the pied tamarin, *S. bicolor* (Egler, 1986; Snowdon and Soini, 1988), while information on the biology of *S. martinsi* is restricted to its geographical occurrence. Bare-face tamarins are endemic to the Amazon rainforest, and all three taxa have very restricted distributions (Hershkovitz, 1977). As far as is known, *S. martinsi* is confined to the north of the Rio Amazonas, between the Rio Erepecurú and the Rio Nhamundá (Hershkovitz, 1977). Its northern limits are unknown. According to Hershkovitz (1977), the

northernmost record for *S. martinsi* is Cachoeira Porteira, based on a specimen from the Museu Paraense Emílio Goeldi (MPEG 420). Rylands (1985) indicated that the Rio Trombetas Biological Reserve, situated on the left bank of the Rio Trombetas, would be the only protected area where *S. martinsi* may occur.

The diet of *Saguinus bicolor* is largely composed of insects and fruits (Hershkovitz, 1977; Snowdon and Soini, 1988). Although there are few records of group sizes, it would seem that *S. bicolor*, as is typical of the genus, lives in groups of generally seven to nine individuals (Snowdon and Soini, 1988). It can be found in a great diversity of habitats, usually using lowland areas and evergreen humid forests (Mittermeier *et al.*, 1977). *S. bicolor* was the first callitrichid from the Brazilian Amazon to be listed as Critically Endangered, largely due to its minute range, which is centered on Manaus and is rapidly being deforested for both urban and rural development. In addition, *S. bicolor* is being replaced by the golden-handed tamarin, *Saguinus midas*, which has been expanding into the periphery of the pied tamarin's remaining habitat (Ayres *et al.*, 1980, 1982; Egler, 1983; Subirá, 1998a, 1998b; Rylands *et al.*, 2003). Although not facing equivalent threats from deforestation, very little is known of the status of *S. martinsi*, which would also seem to have a very restricted range and is quite possibly suffering a similar diminution in its range with its replacement by *S. midas*.

Here we provide an update on the geographic distribution of *S. martinsi*, describing 10 new records in the region of

the Rio Trombetas. In addition, we present data on the sizes of a number of groups observed in the Saracá-Taquera National Forest, west of the lower Rio Trombetas.

Methodology

Study area

Fieldwork was carried out in the Saracá-Taquera National Forest (429,600 ha), an area rich in bauxite, located in the district of Porto Trombetas (01°40'S, 56°00'W), municipality of Oriximiná, western Pará, Brazil. The study site is 100 km to the west of the confluence of the Rios Trombetas and Amazonas. The bauxite deposits are associated with a series of Tertiary boundaries, and are found under plateaux at altitudes varying from 150 to 200 m.

The extraction of bauxite requires the removal of the vegetation and of the first layer of soil. Bauxite is usually found at depths of 4 to 15 m, requiring heavy machinery to mine it. Noisy trucks and tractors work full time in three shifts a day. After extraction, the holes are filled with a mixture of soil and vegetational remains, and the area is reforested.

Our study concentrated on two of these plateaux: Almeidas and Bela Cruz. The vegetation there is classified as dense tropical forest in the sub-region of the lower plateaux of the Amazonian rainforest. The canopy is generally dense, reaching 30 to 40 m, with a sparse understorey, except in some areas where it is dense in shrubs and small trees reaching heights of 15 to 20 m. Common emergent tree species include *Dinisia excelsa*, *Bertholletia excelsa* and *Cedrelinga*

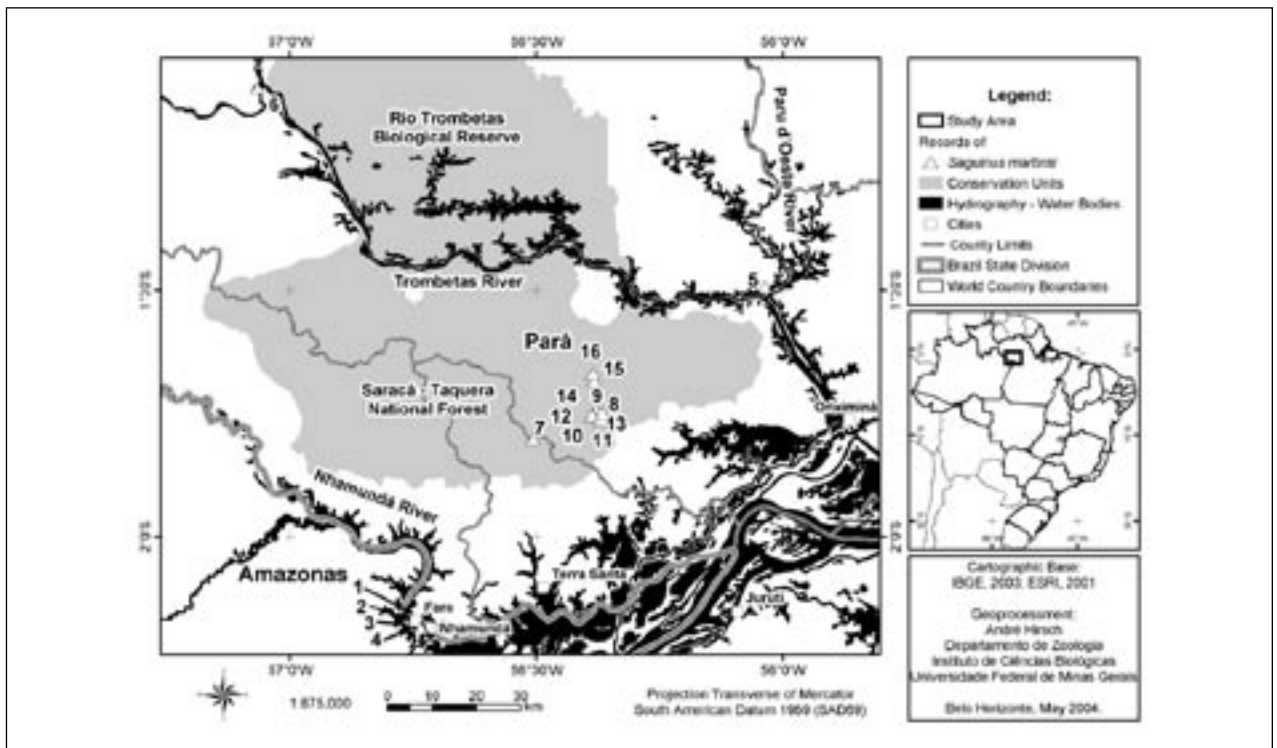


Figure 1. The Rio Trombetas Biological Reserve (385,000 ha) and the Saracá-Taquera National Forest (429,600 ha), indicating the plateaux where *Saguinus martinsi* groups were observed. Localities for *Saguinus martinsi* are included from the literature and from the present study (see Table 2).

catanaeformis (Brazil, MME-DNPM, Projeto RADAM, 1976). The Almeidas and Bela Cruz plateaus are 867 and 1500 ha, respectively. The deforestation of the Almeidas plateau started in August 2002, and will be completed by 2006. The deforestation of Bela Cruz plateau will start in 2008.

Field techniques

Fieldwork was carried out from July to November 2003 by two teams, each composed of one researcher and one field assistant. The censuses, restricted to locating primate groups, began at 06:00 and ended at 11:00 hrs. Sightings of monkeys were recorded *ad libitum* (Altmann, 1974). Geographic coordinates were taken using a Garmin eTrex GPS unit. On encountering a group, each survey team recorded the group size, time of the record, geographic coordinates and the stratum height occupied by the animals.

Table 1. Geographic coordinates and group size of *Saguinus martinsi* in the Saracá-Taquera National Forest, Pará, Brazil.

Date	Plateaus	Coordinates	Group size
29 July 2003	Plateau Almeidas	01°44'29"S, 56°22'40"W	6
2 August 2003	Plateau Almeidas	01°44'31"S, 56°22'44"W	4
29 August 2003	Plateau Bela Cruz	01°48'06"S, 56°30'24"W	3
21 November 2003	Plateau Almeidas	01°45'18"S, 56°23'06"W	4
22 November 2003	Plateau Almeidas	01°45'54"S, 56°22'12"W	5
23 November 2003	Plateau Almeidas	01°45'36"S, 56°22'19"W	8
24 November 2003	Plateau Almeidas	01°45'15"S, 56°23'16"W	1

Table 2. Geographic records of the occurrence of *Saguinus martinsi*.

Localities	References
1. Faro, left bank of the Rio Nhamundá (type locality), 02°11'S, 56°44'W	Cruz Lima (1945), Hershkovitz (1966, 1977), Thomas (1912), MNRJ 2844, MPEG 185
2. Fazenda Paraíso em Palha, municipality of Faro, near 02°11'S, 56°44'W	Hershkovitz (1977), MPEG 184
3. São José, Rio Nhamundá, near 02°11'S, 56°44'W	Hershkovitz (1977)
4. Iacarana, Rio Nhamundá, near 02°11'S, 56°44'W	Hershkovitz (1977)
5. Rio Erepecurú (=Rio Cuminá), right tributary of the Rio Paru d'Oeste, 01°30'S, 56°00'W	Cruz Lima (1945), Hershkovitz (1977)
6. Cachoeira Porteira, Rio Mapuera, municipality of Oriximiná, 01°05'S, 57°04'W	Hershkovitz (1977), MPEG 420
7. Plateau Bela Cruz, 01°48'S, 56°30'W	Present study
8. Plateau Almeidas, 01°44'S, 56°22'W	Present study
9. Plateau Almeidas, 01°44'S, 56°22'W	Present study
10. Plateau Almeidas, 01°45'S, 56°23'W	Present study
11. Plateau Almeidas, 01°45'S, 56°22'W	Present study
12. Plateau Almeidas, 01°45'S, 56°22'W	Present study
13. Plateau Almeidas, 01°45'S, 56°23'W	Present study
14. Bacaba Plateau, 01°45'S, 56°22'W	M. S. Brígida, pers. comm.
15. Reforestation area, 01° 41'S, 56°23'W	M. S. Brígida, pers. comm.
16. Lowland forest, 01°19'S, 56°22'W	M. S. Brígida, pers. comm.

Secondary data

Supporting data on occurrences of bare-face tamarins were acquired from the literature (Cruz Lima, 1945; Hershkovitz, 1966, 1977; Thomas, 1912) and an examination of the mammal collections of the Museu de Zoologia da Universidade de São Paulo (MZUSP), the Museu Nacional, Universidade Federal do Rio de Janeiro (MNRJ) and the Museu Paraense Emílio Goeldi (MPEG). An interview with Manoel Santa Brígida, a technician at MPEG, also provided useful information on three new records of this taxon.

Results

A group of *Saguinus martinsi* was observed for the first time on 29 July 2003. Another six records were later made by direct observations, five on the Almeidas plateau and one on the Bela Cruz plateau (Table 1, Figure 1). Group sizes varied from four to eight individuals (Table 1) and at least four different groups were found in the study area. All records occurred between 06:30 and 10:10 hrs. In all observations, the animals were using the middle strata of the forest, up to 20 m high.

M. S. Brígida also observed a number of *S. martinsi* groups in three areas in the Rio Trombetas region between 1997 and 2003 (Table 2). Figure 2 indicates the results of the review of the literature and of the scientific collections, in addition to the records produced in the present study. These data allow an update of the geographic distribution of *S. martinsi*.

Discussion and Conclusions

Although this study has doubled the number of recorded localities for *S. martinsi*, much more data is needed to better understand its geographical distribution. Although known to occur in the region of the Rio Trombetas (Hershkov-

itz, 1977), there are few field records from there. Its distribution includes only one strictly protected area, the Rio Trombetas Biological Reserve of 385,000 ha; we presume it occurs east of this river to the Rio Paru do Oeste (Erepecurú), but this remains to be confirmed (Rylands, 1985; Rylands and Bernardes, 1989). The correct delimitation of its range is of fundamental importance for its conservation. Although this is an area protected by the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA), the two plateaux censused (and others) will be deforested in the coming years. Cachoeira Porteira remains the northernmost record of *S. martinsi*, albeit from a museum specimen, but it may occur further north. There are no doubts that its range is restricted, however, and potential threats include urbanization and the expansion of bauxite mining activities, besides the establishment of soybean plantations. Further studies are urgently needed to assess the status of *S. martinsi*, besides long-term research on its ecology and behavior.

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Martins's tamarin. Quite the same Wikipedia. Just better.Â Martins's tamarin. From Wikipedia, the free encyclopedia. Martins's tamarin[1][2]. Conservation status. Least Concern (IUCN 3.1)[3].Â Saguinus martinsi. New records of Martins's bare-face tamarin, Saguinus martinsi (Primates: Callitrichidae). Neotropical Primates 12(1): 9-12. Rylands, A.B., Coimbra-Filho, A.F. and Mittermeier, R.A. 1993. Systematics, distributions, and some notes. on the conservation status of the Callitrichidae. In: A.B. Rylands (ed.), Marmosets and Tamarins: Systematics, Behaviour and Ecology, pp. 11-77. Oxford University Press, Oxford, UK.Â Bare-faced tamarins of the genus Saguinus are represented by the S. oedipus group with S.leucopus, S. oedipus (geoffroyi a subspecies), S.inustus, and by the S.bicolor group. The latter is monotypic with subspecies bicolor, martinsi and the intermediate ochraceus described as new. View. Callitrichidae - marmosets, tamarins. There are about 42 species of small primates in this family. Marmosets and tamarins are found in Central and South America. They have rounded heads and front-facing eyes. Most species are covered in soft fur, except for on their faces. They have long, furred, non-prehensile tails and most species have tufts of fur on their heads.Â Martin's Bare-face Tamarin - Saguinus martinsi White Saddleback Tamarin - Saguinus melanoleucus Yellow-handed Tamarin - Saguinus midas Moustached Tamarin - Saguinus mystax Black-handed Tamarin - Saguinus niger Black Mantle Tamarin - Saguinus nigricollis Cotton-headed Tamarin - Saguinus oedipus Golden-mantle Saddleback Tamarin-Saguinus tripartitus. Martins' bare-faced tamarin, Saguinus martinsi martinsi, is endemic to the Brazilian Amazon, with a restricted range in the west of the state of Par  (Oliveira et al. 2004;Rylands and Mittermeier 2013). Published studies regarding the species have assessed its occurrence and distribution (Oliveira et al. 2004(Oliveira et al. , 2009Andrade 2007), biogeography (Cropp et al. 1999), and phylogeny (Cunha et al. 2011) but its ecology and behavior are still poorly known (Oliveira et al. 2004). Martins' bare-faced tamarin, Saguinus martinsi martinsi, is endemic to the Brazilian Amazon, with a restricted range in the west of the state of Par  (Oliveira et al. 2004;Rylands and Mittermeier 2013). The Pied Tamarin (Saguinus bicolor) may produce hybrids with Martins's Bare-face Tamarin (S. martinsi martinsi) in a contact zone, resulting in the Ochraceous Bare-face Tamarin (S. martinsi ochraceus). The Pied Tamarin produces fertile/partially fertile hybrids of both sexes with the Red-handed Tamarin, (S. midas).Â It's a New-Fangled Hybrid Beast of Bostock'e Invention. Bostock's Coney Island animal show is ready for business again. Bears, lions, tigers â€ every sort of wild beast that ever was heard of â€ are there in frightening numbers.